Worksheet to Identify Potential Indicators for Ecological Monitoring

You return to visit your park in 20 years and walk through the park with the current resource manager. The manager tells you about the current condition of the natural resources, the management issues, and threats of the day. What would that person describe to you?

Urban development. Pressure for pathways and urban outdoor recreation. Viewed as a city park. Still fighting cheatgrass and exotics (could be new exotics like phragmites and purple loosestrife), and dealing with prairie dogs. Water will continue to be an issue and canal boundaries may be an issue. Deer could be an issue due to increasing urbanization.

What are the communities at your park (e.g., native mixed-grass prairie, barren badlands topography, prairie stream, forested riparian area) and approximate percentage of total area?

None other than what's on veg map (except maybe Scotts Spring).

What are the park's most significant natural resources (e.g., the river and its tributaries, caves and cave fauna, rare plant communities, elk herd)?

The badlands and bluffs (including the south bluff), the prairie, the river. Some people come out for night sky, especially for certain events. The riparian area, however, it was not woody at the time of the pioneers (Bob would like to control woody vegetation, but others do not)a;

What does your park contribute to regional biological diversity (e.g., what natural resources are preserved and protected at your park that are altered or threatened throughout the rest of the region)?

Bats. (Some type of wren.) Unique geologic features (e.g., geologic layers, crystals).

What park-specific legislative mandates direct the park to monitor a particular natural resource at your park.

The bluff, the views from and of, and the Oregon trail.

What federally- or state-listed threatened and endangered species are known to occur in the park?

Prairie dogs are a federal candidate. There are 12 state-listed plants. Bighorn sheep(?). River otter(?).

What is that status of your park's management plans?

1998 GMP. Have a Fire Plan around 2001. RMP in 1996. IPM in 1984.

What is currently being monitored at or near the park by NPS or other entities (e.g., plants by fire effects program, plants by LTEM, exotic plants by exotic plant teams, birds by Breeding Bird Survey, butterflies, stream by USGS, Christmas bird count, weather

data, NRCS photography, visitors by park staff, state roadside counts --- use the checklist below)?

Air: *No. The city of Scottsbluff has an air quality station. Probably a Class II area. Sometimes have air quality issues due to dust, perhaps from ag.*

Amphibian: *No.*

Birds: *No. Local Audubon does a Christmas bird count and breeding bird count. Deb has a report; Bob will try and get all reports from.*

Fire: *Fire Effects program.*

Fish: *No.*

Geology: *Maintenance guys monitor a crack on the bluff, done because of safety concerns at trail. JimC annia of State comes out on a regular basis. NOAA has 2 permanent stations in the park gravity as it relates to groundwater. They got a park research permit.*

Mammals: *LTEM does prairie dogs. CWD. Hanta virus study was done by CDC in 97.*

Meteorology: *Park has a RAWS station. Sheriff drives to summit in tornadoes.*

Pests: *Mosquitos are an issue but no monitoring. Gypsy moth traps in park by State; has been going on for years.*

Pesticides *No.*

Reptiles: *No (other than observations).*

Soils: *No.*

Sound: *No.*

Vegetation: *LTEM and Fire Effects. Dr. Susan Tunnell (and Stubbendieck) sedge restoration monitoring.*

Visitors. *No monitoring on trails. They have a Visitor Use Survey. Off trail use may be declining. Have number for total park visitors. Have two traffic monitors on road.*

Visual Landscape: *Has some historic photos. No photo points. "Bluff.com" Has extensive aerial collection.*

Water Quality: *Drinking water is connected to city. State has periodically taken samples from Scotts Spring. Park did historically use Scotts Spring for drinking water, but probably did not test. Gering has radiation ground water.*

Wildlife or Plant Disease: *CWD and West Nile.*

What are the stressors on park resources? *Urban interface, canal maintenance, railroad and associated management (cut hills, air quality, sound), lights, general visitor use, the absence of grazing, exotics, increase fuel in the riparian area..*

What are some monitoring questions relating to current internal natural resource management actions or external threats (e.g., is the prescribed fire regime maintaining healthy native prairie?)?

Is burning controlling downy brome.
Is the community structure changing over time
Is global warming changing community composition..

What potential management actions in the future may require monitoring (e.g., potential species reintroductions, land acquisitions, commercial uses)?

Possible acquisition by Roubideax pass.
Would like to reintroduce sharp-tails.

What would your partners like you to monitor?

Control and monitor noxious weeds.

What current research is occurring at the park (research differs from monitoring in that it is typically of shorter duration, say 2-3 years)?

Fly inventory by University of Nebraska. The sedge project. Amy's grazing project.

Vital signs are: 1) sensitive enough to provide early warning of change, 2) have low natural variability, 3) can be accurately and precisely measured, 4) have costs and effort of measurement that are not prohibitive, 5) have monitoring results that can be interpreted and explained, 6) are low impact to measure, and 7) have measurable results that can be replicated with various personnel. Off the top of your head, look into your crystal ball and choose several vital signs to monitor over time to track the condition of natural resources within your park (items can range from broad, e.g., the stream, to narrow, e.g., a particular species). What are those vital signs? Rank them in order of importance.

Prairie plant community (with emphasis on exotics abundance and distribution). Most likely with plots. Could include aerial photographs to monitor cheatgrass.

Water quality and quantity from canal as seeps through soil and impacts to plants.